

The Extreme Ultraviolet (EUV) instrument for the MAVEN mission

The Mars Atmosphere and Volatile Evolution Mission (MAVEN) will explore the variability in the planet's upper atmosphere and ionosphere that is dominated by interactions with the sun, specifically the high-energy photons in the soft X-ray and extreme ultraviolet wavelengths as well as interactions with the solar wind. Scientists will use MAVEN data to determine the current loss rate of volatile compounds from the Mars atmosphere, then extrapolate back in time in order to give historical estimations of state of the Mars atmosphere and climate, its ability to sustain liquid water, and the potential for the Martian habitability. The EUV instrument is critical in measuring the Space Weather driver of this atmospheric variability. It will directly observe a three EUV wavelength ranges and their variability due to solar flares (time scales of seconds to hours) as well as active region evolution (months), which will then act as proxies for a model to determine the entire 0.1-200 nm solar spectrum at all times during the MAVEN mission. These EUV measurements and models results will compliment the other instruments that will provide direct in-situ as well as remote sensing observations of the Martian atmospheric response to this solar driver. This presentation will be an introduction of this instrument and its science measurements and goals to the larger community, as well as a status report on its progress.